

**REMARKS**

This Amendment is being filed in response to the Office Action mailed from the U.S. Patent and Trademark Office on June 19, 2003, in which claims 1-17 were rejected. With this Amendment, claims 1, 3, 5, 9 and 13 are amended. Claims 2, 6 and 14 are cancelled without prejudice. Claims 18-25 have been added. Claims 1 and 3-5, 7-13, 15-25 are pending.

The specification was objected to because "the incorporation of essential material in the specification, page 52, line 5 through page 58, line 11, by reference to a foreign application or patent, or to a publication is improper." The Office Action states that "Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application."

Applicant notes that all amendments herein are drawn from the Specification directly. Therefore, Applicant submits that a declaration by the Applicant is not necessary.

The Specification was also objected to because of lack of Background of the Invention. The Office Action states that:

"the Specification should set forth the Background of the Invention in two parts:

- (1) Field of Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
- (2) Description of the Related Art including information disclosed under 37 C.F.R. 1.97 and 37 C.F.R. 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art".

Applicant submits that Amendments to the Specification included herein have incorporated a statement of the Field of Invention. Applicant also submits that a section entitled

“Background of the Invention” already existed in the original application. We have renamed the section “Background Art”, solely in order to comply with the Examiner’s suggestions.

The Specification was objected to because of lack of reference to a Copending Application. The Office Action states that this application appears to claim subject matter disclosed in prior Application No. 60/193,353, filed March 28, 2000. The Office Action states that reference to the prior application must be inserted as the first sentence of the specification of this application or in an application data sheet (37 C.F.R. 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e) or 120. See C.F.R. 1.78(a).

Applicant submits that the current amendments to the Specification include addition of reference to the prior Application No. 60/193,353. The Amendment adds no new matter.

#### **Claim Rejections – 35 U.S.C. 102**

Claims 1, 5, 9, 13 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No. 5,196,510 issued to Rodwell et al. (hereafter Rodwell ‘510). The Office Action states that:

“regarding claims 1, 5, 9, 13 and 17, Rodwell ‘510 discloses: a web site containing a database of monospecific probe properties / monoclonal antibodies and connected to users through a computer network to allow users to enter criteria for retrieving monospecific probe / monoclonal antibodies properties wherein the web site produces a list of matching information on monospecific probes / monoclonal antibodies matching the selection criteria and displays the matching information on monospecific probes / monoclonal antibodies on the list in an order determined by each probe’s similarity to the selection criteria [col. 13, line 48 through column 14, line 14].”

Applicant submits that claims 1, 5, 9 and 13, as amended herein, require that said database comprises monospecific probe properties identified by flow cytometry (claims 1, 5 and 13), or a directory computer containing a database, wherein said database comprises monospecific probe properties identified by flow cytometry (claim 9). Applicant submits that flow cytometry is well know in the art and thus a property of a monospecific probe identified by flow cytometry will be evident to one of skill in the art. Applicant submits that Rodwell ‘510

does not teach a database comprising monospecific probe properties identified by flow cytometry. As such, Applicant submits that Rodwell '510 does not anticipate the claims as amended.

With regard to claim 17, Applicant submits that Rodwell '510 does not disclose a method of "comparing two monospecific probe histograms", as required by the claim. As such, claim 17 is not anticipated by Rodwell '510.

In view of the above, Applicant submits that the amended claims 1, 5, 9 and 13, and original claim 17 are novel over Rodwell '510, and respectfully request reconsideration of these claims.

#### **Claim Rejections – 35 U.S.C. 103**

Claims 2, 6, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodwell '510 as applied to claims 1, 9 and 13 above, and further in view of US Pat No. 4,741,043, issued to Bacus (hereafter Bacus '043). The Office Action states that:

"regarding claims 2, 6, 10 and 14, Rodwell '510 discloses the essential elements of the claimed invention except for monospecific probe histograms. Bacus '043 discloses monospecific histograms [Fig 9]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rodwell '510 to include monospecific histograms as taught by Bacus '043 for the purpose of displaying cell DNA content [col. 8, line 1]."

Applicant respectfully disagrees.

Applicant submits that, as defined in the specification, the term monospecific probe refers to "an entity that specifically binds a single distinct moiety of a given chemical structure or molecule." The specification further states that "monospecific probes encompass, but are not limited to monoclonal antibodies, which bind a specific antigenic epitope" (see page 6, lines 10-12). Applicant submits that a person skilled in the art knows that dyes most commonly used to stain DNA as described in Bacus '043 bind nucleic acids indiscriminately with respect to sequence specificity, and thus do not bind a single distinct moiety of a given chemical structure or molecule, and therefore do not qualify as monospecific probes as the term is used in the

specification. Applicant therefore submits that Bacus '043 does not teach monospecific probe histograms. Because Bacus '043 does not teach monospecific probes as the term is used in the present specification, Applicant submits that it does not supply a missing element of Rodwell '510 necessary to render the claims obvious. Therefore, Applicant submits that no combination of Rodwell '510 and Bacus '043 can render the claimed invention obvious. As such, Applicant respectfully requests reconsideration of claims 2, 6, 10 and 14.

Claims 3, 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Rodwell '510 and Bacus '043 as applied to claims 2, 9 and 13 above, and further in view of US Pat No. 5,487,112 issued to Zygourakis et al. (hereafter Zygourakis '112). The Office Action states that:

“Regarding claims 3, 11 and 15, the combination of Rodwell '510 and Bacus '043 discloses the essential elements of the claimed invention except for kernel smoothing. Zygourakis '112 discloses kernel smoothing [col. 4, lines 18-32]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Rodwell '510 and Bacus '043 as taught by Zygourakis '112 for the purpose of providing a calibration routine [col. 4, line 10].”

Applicant respectfully disagrees.

As discussed above, Applicant submits that Bacus '043 does not teach or suggest a database comprising monospecific probe properties identified by flow cytometry data. Applicant further submits that this deficiency is not remedied by Zygourakis '112. As such, Applicant submits that no combination of Rodwell '510, Bacus '043 and Zygourakis '112 can supply all elements of these claims. Applicant therefore submits that claims 3, 11 and 15 cannot be obvious over any combination of these references. As such, Applicant respectfully requests reconsideration of claims 3, 11 and 15.

Claims 4, 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodwell '510 as applied to claims 1, 9 and 13 above, and further in view of US Pat No. 4,870,568 issued to Kahle et al. (hereafter Kahle '568). The Office Action further states that,

“Regarding claims 4, 12 and 16, Rodwell ‘510 discloses the essential elements of the claimed invention except for relevance feedback. Kahle ‘568 discloses relevance feedback [col. 2, line 60 through col. 3, line 15]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rodwell ‘510 to include relevance feedback as taught by Kahle ‘568 for the purpose of formulating a search strategy [col. 2, lines 55-61].”

Applicant respectfully disagrees.

Applicant submits that, with the amendments made to independent claims 1, 5, 9 and 13, which claim databases comprising monospecific probe properties identified by flow cytometry data, the combination of Rodwell ‘510 and Kahle ‘568 does not supply all the elements of claim 7, as neither discloses databases comprising monospecific probe properties identified by flow cytometry data. As such, Applicant submits that claim 4, 12 and 16 cannot be obvious over any combination of these references. Applicant respectfully requests reconsideration of claim 4, 12 and 16.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodwell ‘510 as applied to claims 1, 9 and 13 above, and further in view of Pub No US 2002/0015971 authored by Verwer (hereafter Verwer ‘591). The Office Action states that;

“Regarding claim 7, Rodwell ‘510 discloses the essential elements of the claimed invention except for generating a histogram by means of a flow cytometer. Verwer ‘591 discloses generating a histogram by means of a flow cytometer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rodwell ‘510 to include generating a histogram by means of a flow cytometer as taught by Verwer ‘591 for the purpose of sorting the cells [paragraph 0029].”

Applicant submits that paragraph 0029 within Verwer ‘591 cited by the Office Action does not teach or suggest histograms. Applicant further submits that the only mention of histograms within the written description [paragraph 0058] describes

“that  $f(x)$  and  $f(x)$  are estimated by constructing the histograms of the parameters of the events in the subset and in the whole dataset, and then an estimate of the cumulative probability density function  $F'(x)$  and  $F(x)$  is computed by

$F'(x) = \text{sum of } f(y), \text{ with } y \text{ taken from } 0 \text{ to } x$

$F(x) = \text{sum of } f(y)$ , with  $y$  being taken from 0 to  $x$ .”

Furthermore, Applicant submits that, with the amendments made to independent claims 1, 5, 9 and 13, which claim databases comprising monospecific probe properties identified by flow cytometry, the combination of Rodwell ‘510 and Verwer ‘591 does not supply all the elements of claim 7, as neither discloses databases comprising monospecific probe properties identified by flow cytometry. As such, Applicant submits that claim 7 can not be obvious over any combination of these references. Applicant respectfully requests reconsideration of claim 7.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Rodwell ‘510 and Verwer ‘591 as applied to claims 5 and 7 above, and further in view of US Pat No. 5,487,112 issued to Zygourakis et al. (hereafter Zygourakis ‘112). The Office Action states that

“Regarding claim 8, the combination of Rodwell ‘510 and Verwer ‘591 discloses the essential elements of the claimed invention except for kernel smoothing. Zygourakis ‘112 discloses kernel smoothing [col. 4, lines 18-32]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Rodwell ‘510 and Verwer ‘591 as taught by Zygourakis ‘112 for the purpose of providing a calibration routine [col. 4, line 10].”

Applicant respectfully disagrees.

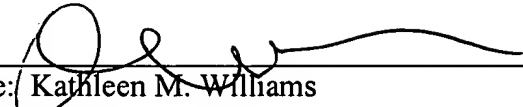
Applicant submits that Zygourakis ‘112 does not teach or suggest a database comprising monospecific probe properties identified by flow cytometry. As such, Applicant submits that no combination of Rodwell ‘510 and Zygourakis ‘112 can supply all the elements of the present claim. As such Applicant submits that claim 8 cannot be obvious over any combination of these references. Applicant respectfully requests reconsideration of claim 8.

In view of the above, Applicant submits that all issues raised in the Office Action have been addressed herein. Applicant respectfully requests reconsideration of the claims.



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